# Carn Fearna Wind Farm Limited

## Carn Fearna Wind Farm – Noise and Vibration

## Technical Appendix 12.2
## Background Noise Survey Measurement Data

**Project Number:** 22130

**Document Reference:** 22130-R2 V3

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# 1 Introduction

1.1.1 This Appendix contains the details of the noise and wind data measured during the background noise survey. For all graphs shown, blue diamonds represent data points that have been included in the assessment, orange squares illustrate where data have been excluded due to rain, and red squares show where data have been excluded for other reasons, such as wind direction or evidence of extraneous noise.

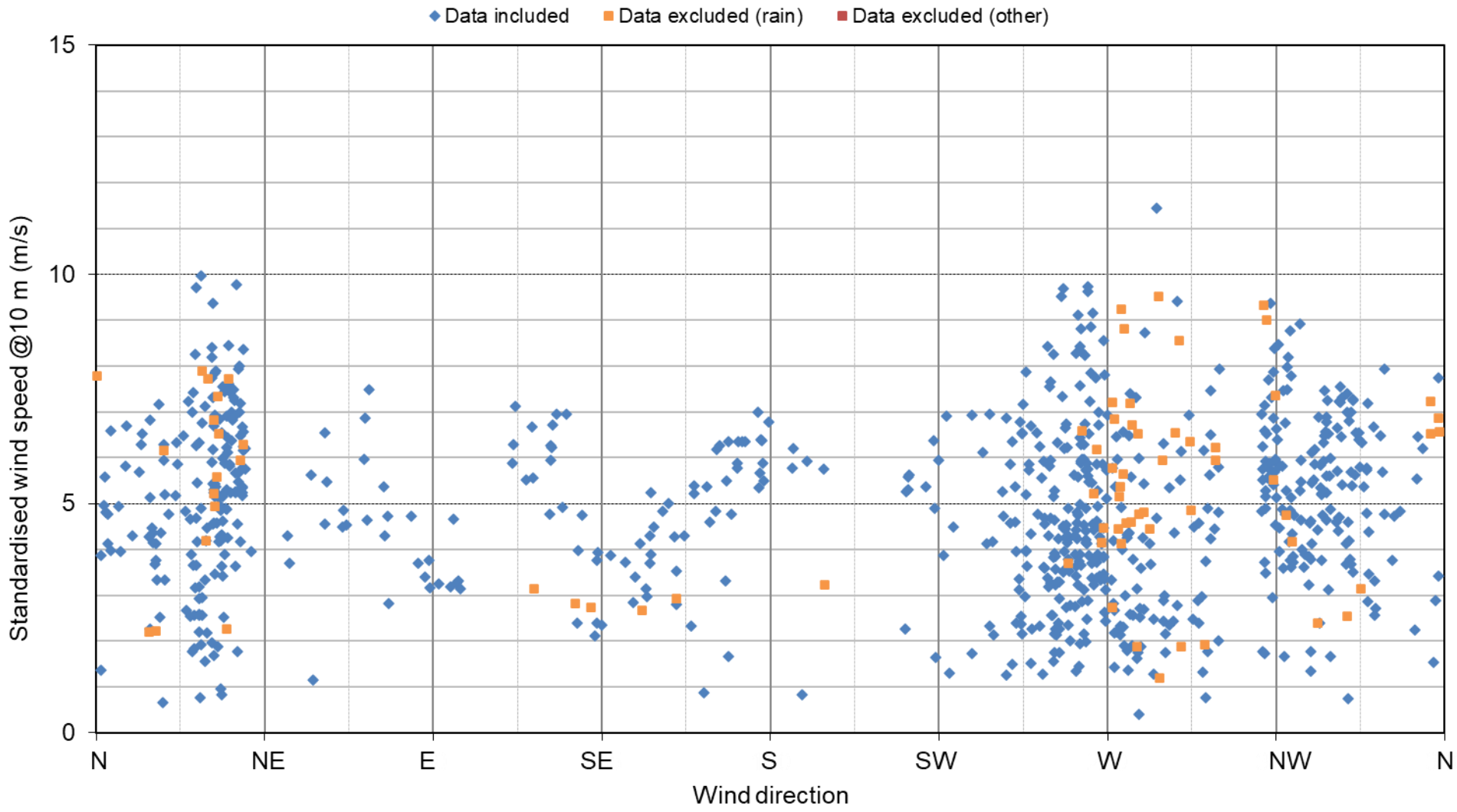
1.1.2 Graph 1 and Graph 2 show the range of wind speeds and directions captured during the background noise survey; the data is shown for Tigh Fiodha. It can be seen in Graph 2 that there are greater exclusions during the night-time period, which are predominantly due to dawn chorus, as set out in Chapter 12 of the EIA Report.

1.1.3 Graph 3 to Graph 10 display the measured noise level, in terms of the $L_{A90}$ parameter, plotted against the standardised 10 m wind speed for each of the noise measurement locations and the quiet daytime and night-time periods. These figures display the data points that are included and excluded, together with the trend line and expression which passes through all included data points. The noise limit has been shown on these graphs as a thick black line.

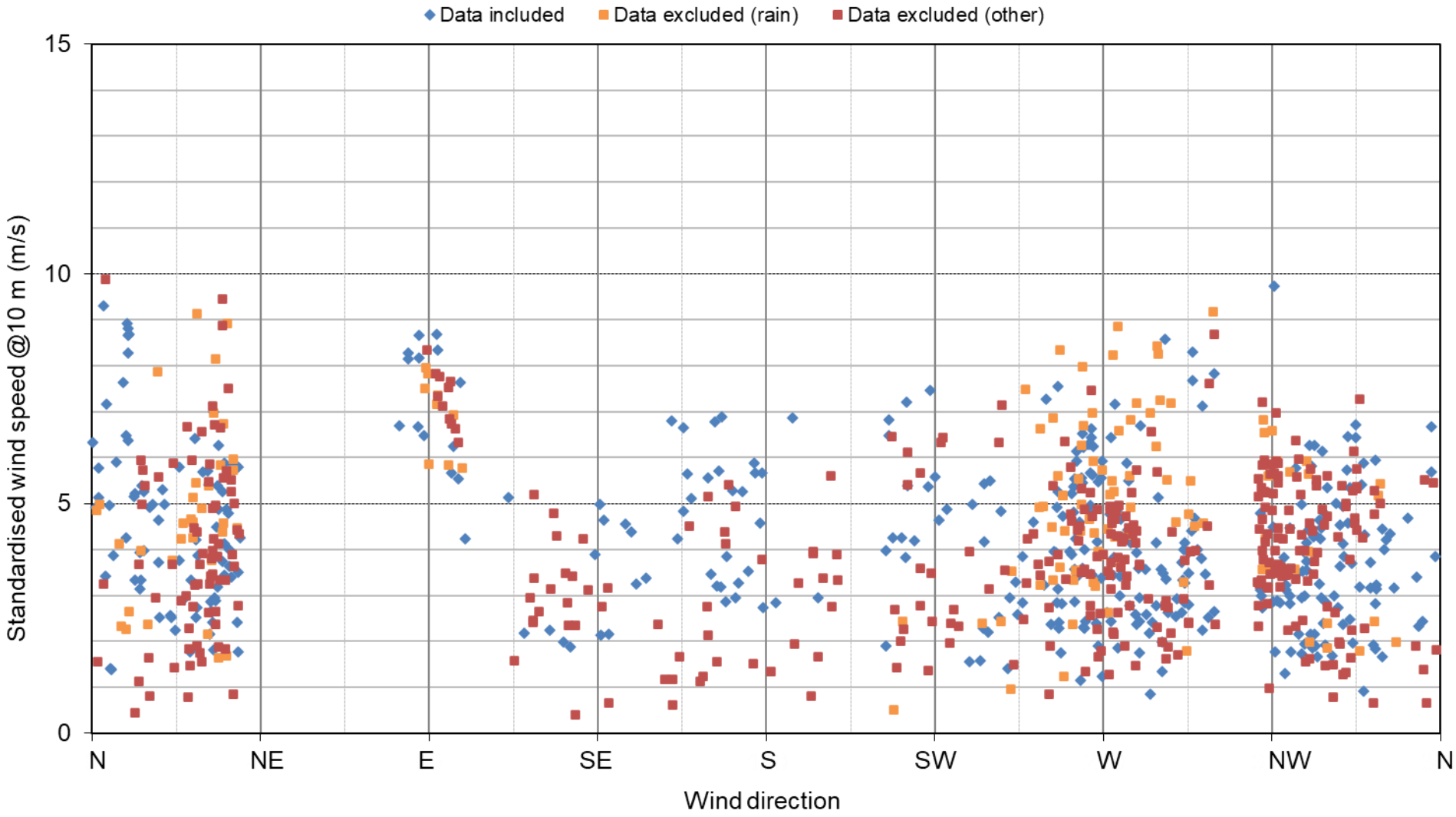
1.1.4 In addition to extraneous data that were noted during the analysis, data were also excluded at NML3 – Station Road based on the time of day. This was due to the noise climate at this location being influenced by road and rail transportation sources. Passing trains predominantly occurred during the day and outside of the two assessment periods of ETSU-R-97: quiet daytime and night-time, as defined in Chapter 12 of the EIA Report. The 18:55 train is noted to wait in Garve station for the preceding 5-minutes, which could influence the 10-minute $L_{A90}$. As a precaution, all data measured between the hours of 18:40 and 19:10 were excluded, which captured the period when the train is scheduled to wait and the periods either side. Furthermore, the ferry at Ullapool has the potential to influence the road traffic on the A835 adjacent to this monitoring location. Allowing for travel time to and from Ullapool, the weekday ferries are unlikely to result in atypical traffic movements during the two assessment periods of ETSU-R-97. However, the following periods have been excluded as a precautionary measure as they may be times when increased traffic is present:

- Saturdays 17:30 – 18:00 due to vehicles potentially driving to catch the 19:00 ferry;
- Saturdays 19:00 – 19:30 due to vehicles potentially driving off the 18:10 ferry;
- Sundays 10:00 – 10:30 due to vehicles potentially driving to catch the 11:30 ferry;
- Sundays 11:30 – 12:00 due to vehicles potentially driving off the 10:40 ferry;
- Sundays 17:00 – 17:30 due to vehicles potentially driving to catch the 18:30 ferry; and
- Sundays 18:30 – 19:00 due to vehicles potentially driving off the 17:40 ferry.

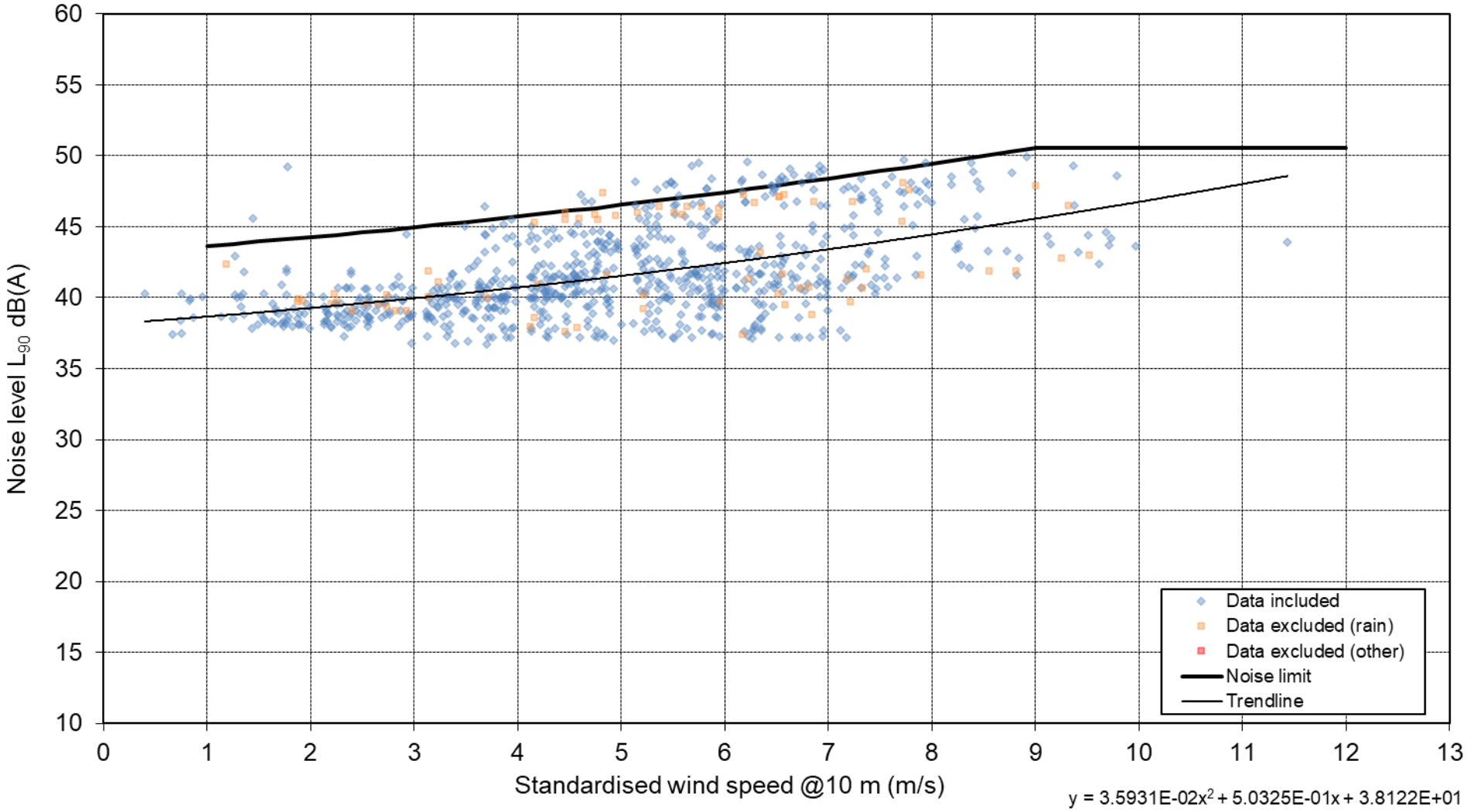
**Graph 1 - Wind Speed and Direction Data During Baseline Noise Survey - Quiet Daytime Period**



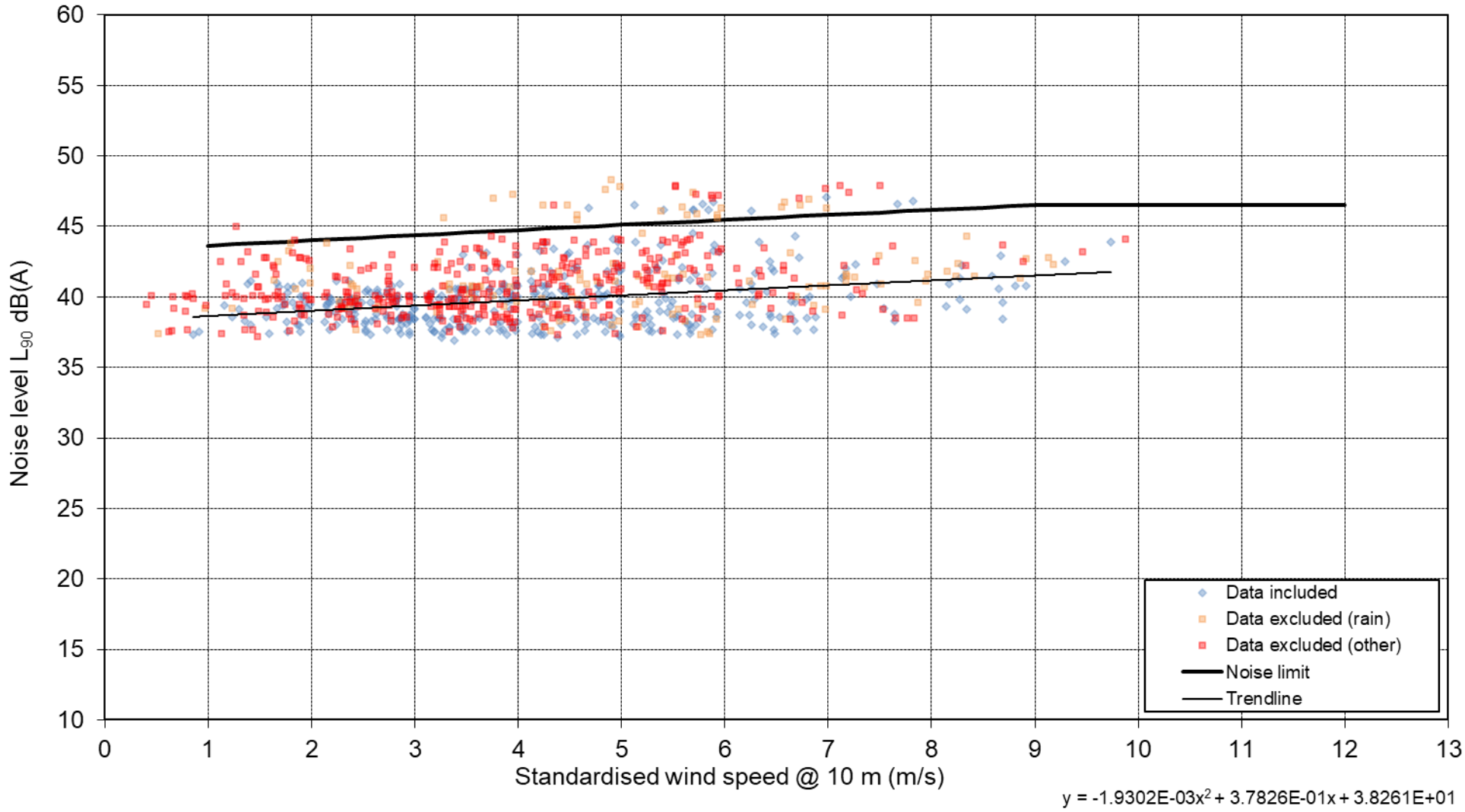
**Graph 2 - Wind Speed and Direction Data During Baseline Noise Survey – Night-time Period**



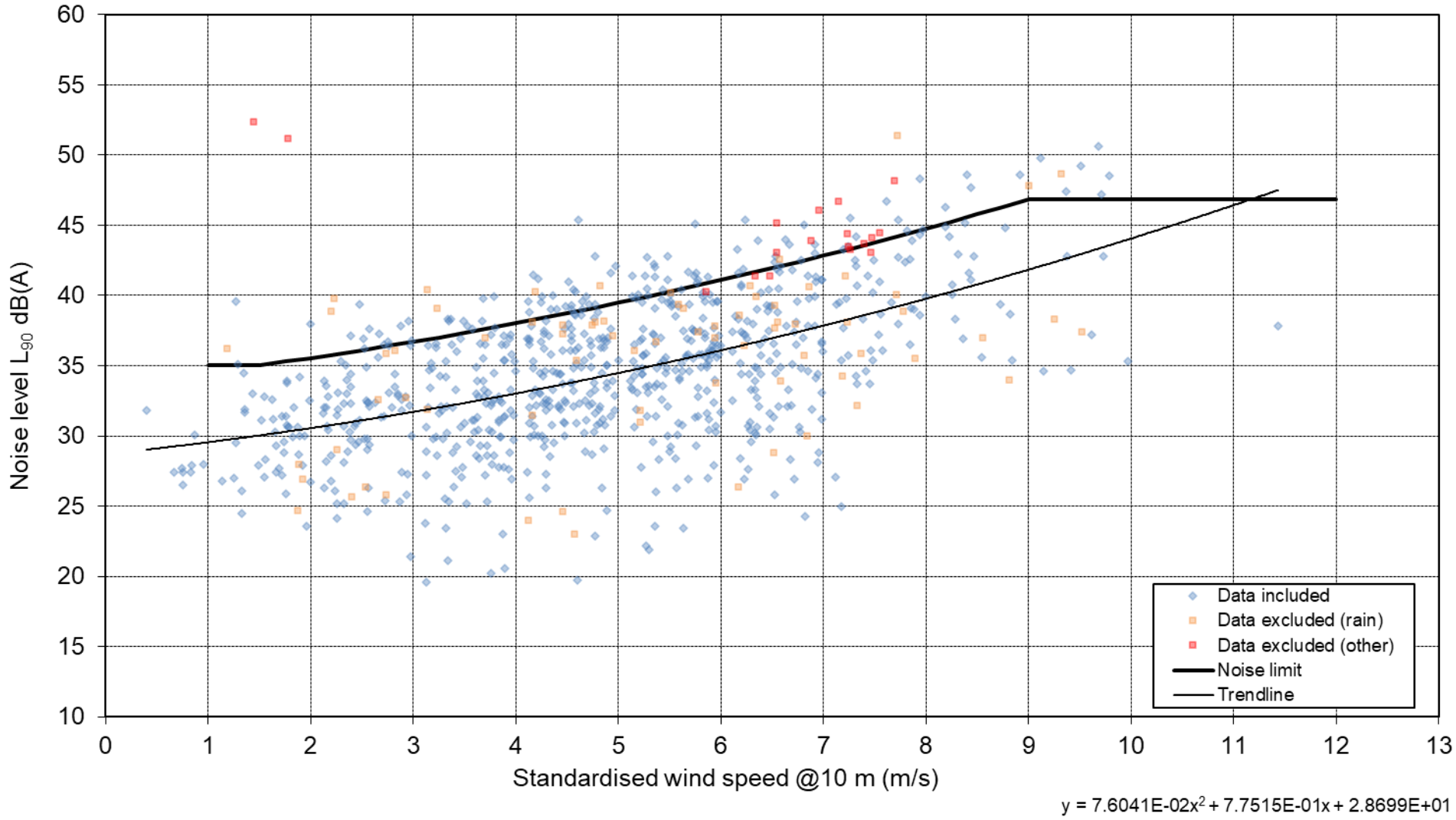
**Graph 3 – Background Noise Data During Baseline Noise Survey – Quiet Daytime Period – NML1 Tigh Fiodha**



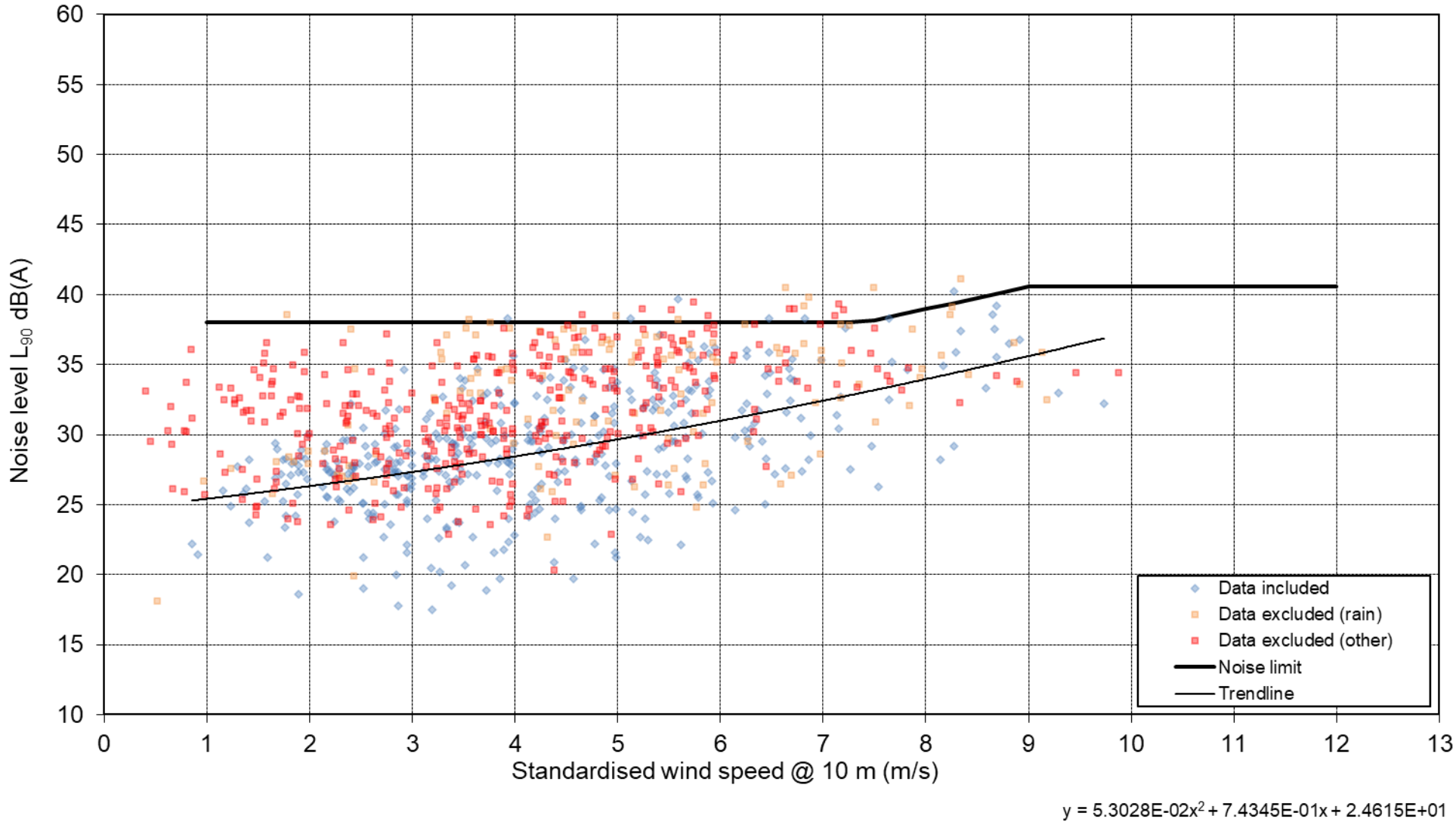
**Graph 4 – Background Noise Data During Baseline Noise Survey – Night-time Period – NML1 Tigh Fiodha**



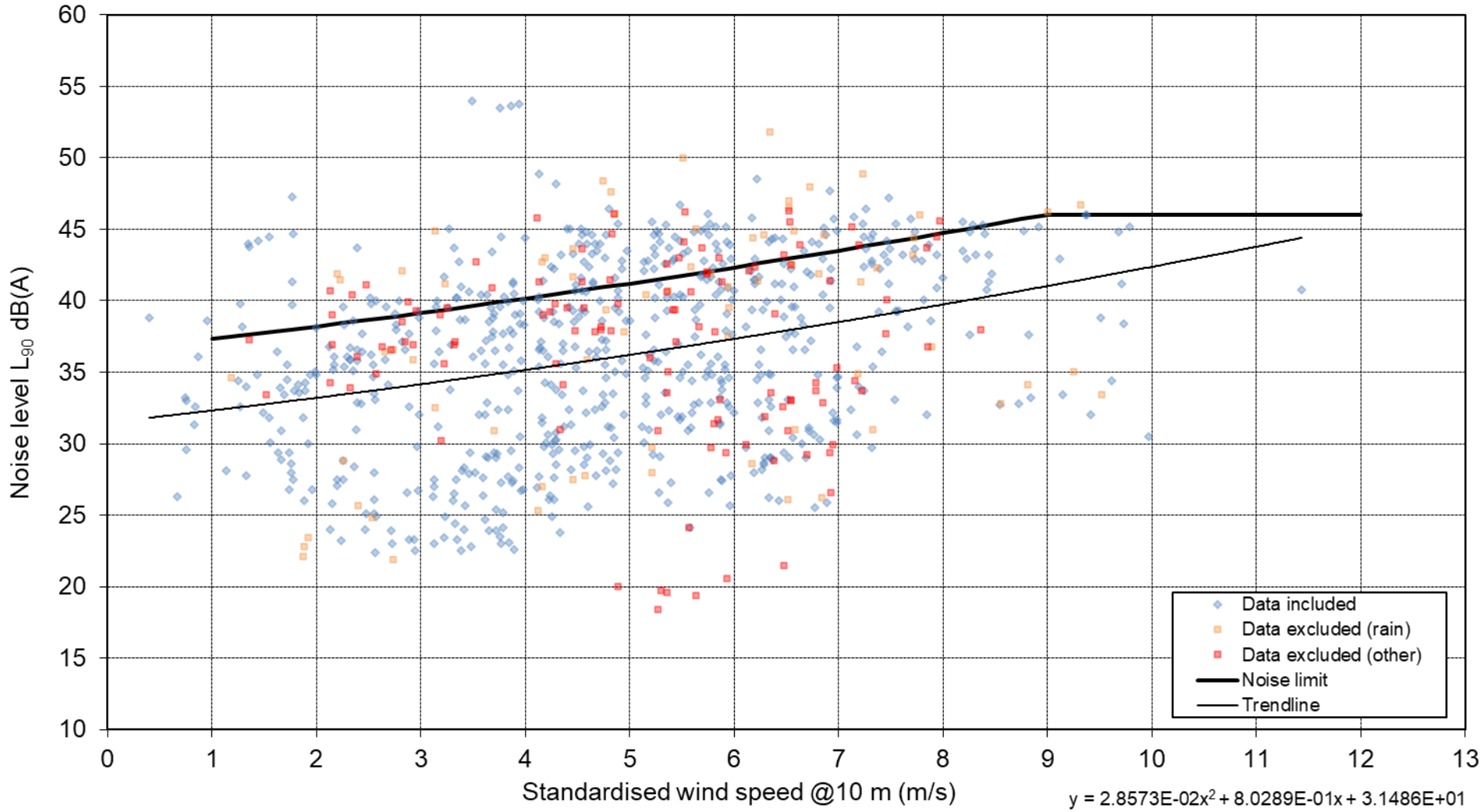
**Graph 5 – Background Noise Data During Baseline Noise Survey – Quiet Daytime Period – NML2 The Cottage**



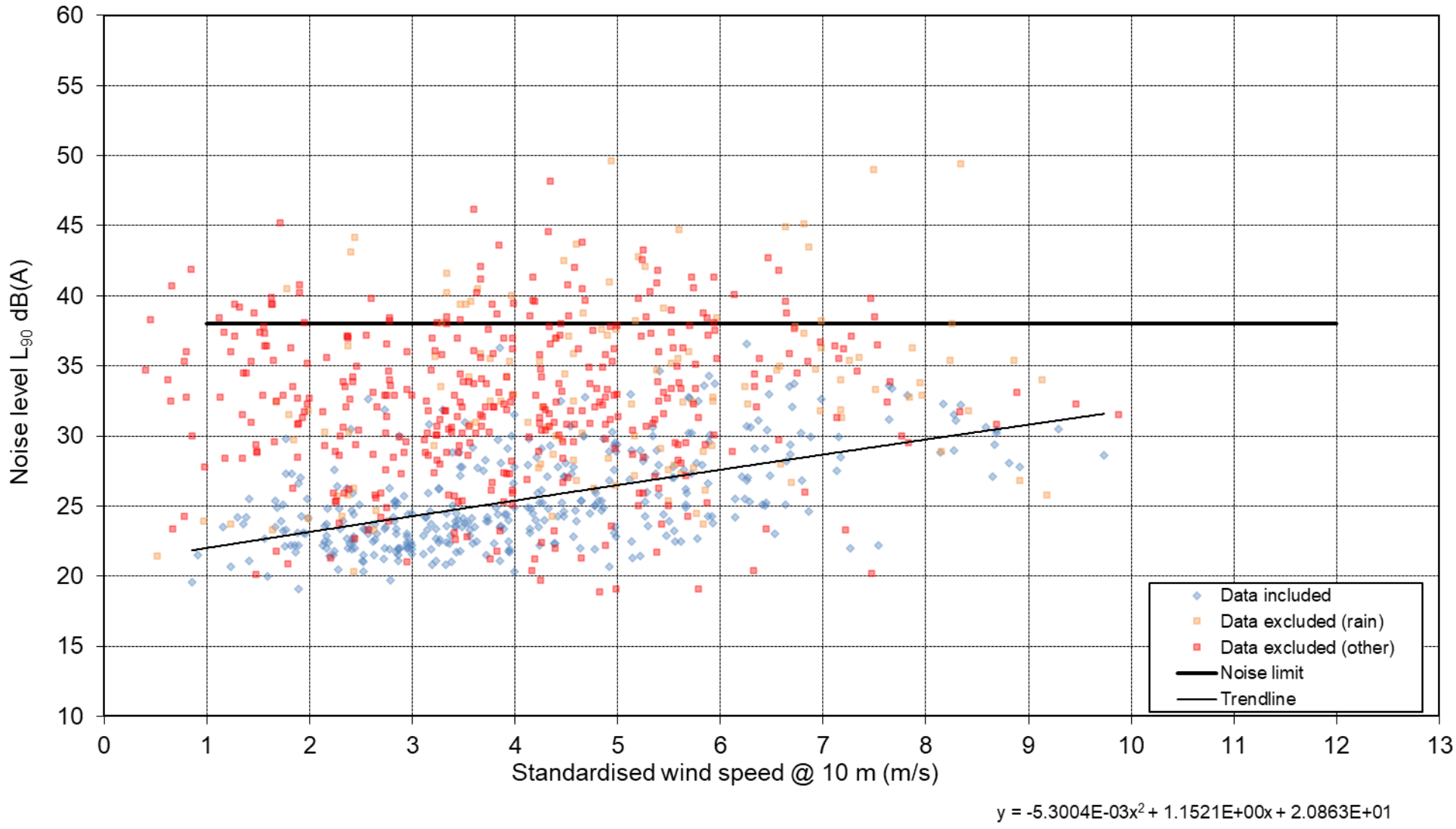
**Graph 6 – Background Noise Data During Baseline Noise Survey – Night-time Period – NML2 The Cottage**



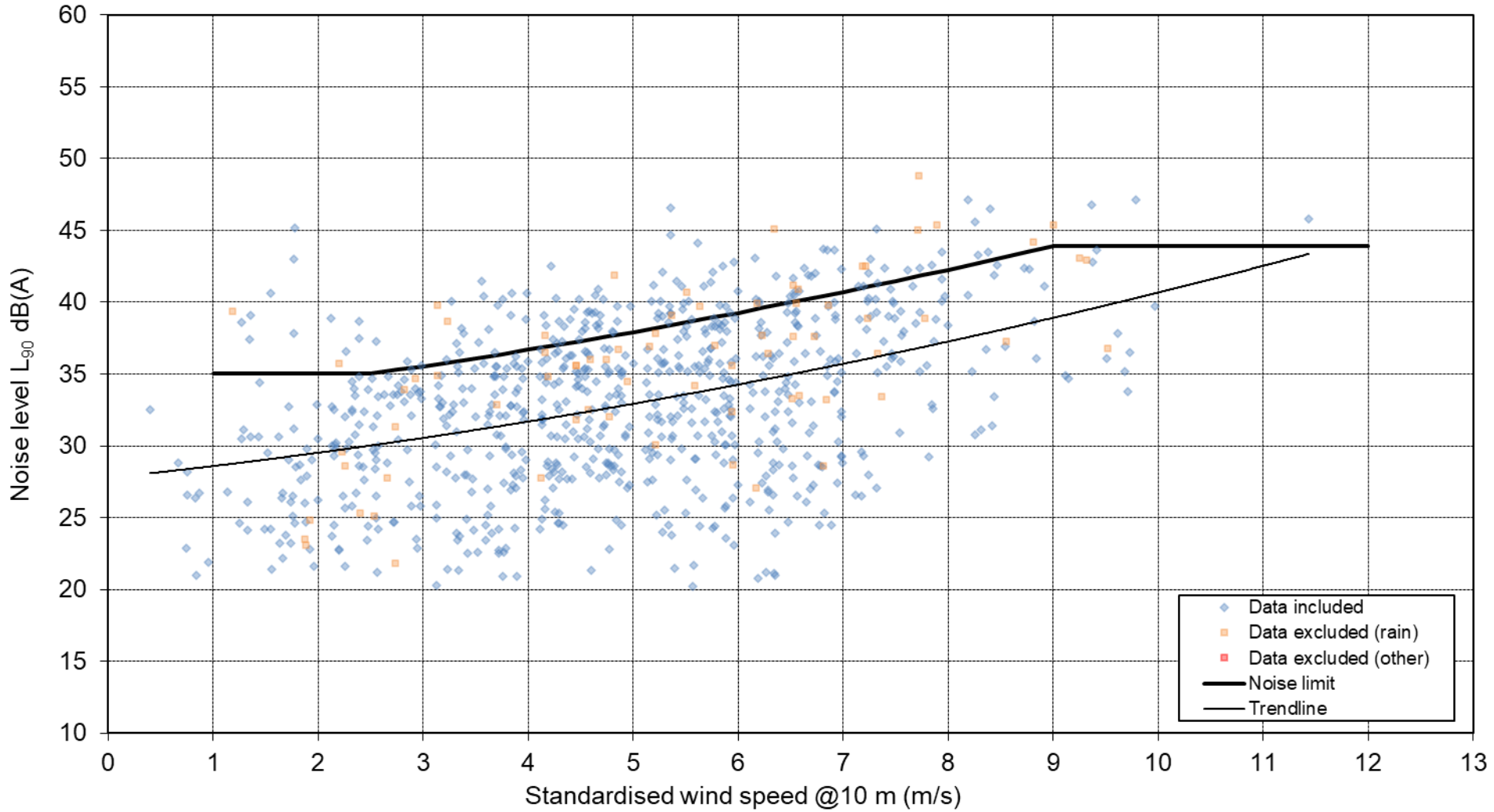
**Graph 7 – Background Noise Data During Baseline Noise Survey – Quiet Daytime Period – NML3 Station Road**



**Graph 8 – Background Noise Data During Baseline Noise Survey – Night-time Period – NML3 Station Road**



**Graph 9 – Background Noise Data During Baseline Noise Survey – Night-time Period – NML4 Cluaran, Tarvie**




$y = 5.1724E\text{-}02x^2 + 7.7278E\text{-}01x + 2.7765E+01$

**Graph 10 – Background Noise Data During Baseline Noise Survey – Night-time Period – NML4 Cluaran, Tarvie**